

IS YOUR WOOD
READY
TO BURN



Social Marketing Fix for Wood Smoke Communications Challenges

Washington Wood Smoke Campaign 2009-2011
Outcomes Report
Northwest Air Quality Communicators Group

FRAUSE



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Executive Summary

The Washington Wood Smoke Campaign outcomes can inform wood burning outreach efforts conducted by air district communications professionals. This new research-based information sheds light on how to effectively approach people who produce excessive wood smoke from indoor, residential wood burning in wood stoves and fireplaces. The campaign, called *Is Your Wood Ready to Burn*, was implemented by the Washington subgroup of the Northwest Air Quality Communicators Group and the Frause team. It was funded by the Washington Department of Ecology, Puget Sound Clean Air Agency and Olympic Region Clean Air Agency.

Wood smoke is not a new issue for air quality districts, but it is a priority for some. There are certain communities throughout the United States where wood smoke from residential fires can be a problem on certain days during the fall and winter seasons. Public education programs about clean wood burning, wood stove replacement and burn ban programs have helped air districts make great strides towards improving air quality in communities, but they have not eliminated the challenge. With the current economic strain, many of these gains could be reversed due to a rise in people using wood for heat.

Wood smoke doesn't have to be a head-scratching issue for air quality communicators who are ready to think about wood smoke outreach from a social marketing perspective.

The *Is Your Wood Ready to Burn* campaign used social marketing techniques to define the demographics of frequent wood burners, clarify the behaviors and motivations of this audience and uncover what it would take to get them to take action to reduce wood smoke. The campaign highlighted that individuals' behaviors and the type of fuel they use are the main contributors to wood smoke generation.

Wood burners' knowledge around how to burn wood is also incredibly varied. Some wood burners are taught how to burn wood in their youth, while others burn wood for the first time after purchasing a new wood stove. Wood burning experts confirm that the person and the fuel – not just the appliance - impact whether or not a wood fire produces excessive smoke.

According to John Gulland, author of the blog *The Woodpile*, "The proper function of wood burning appliances is in the hands of the user. The knowledge level and attitude of the user will be reflected in the amount of smoke their wood heating activities produce. We know there are users who take great pride in the fact that their neighbors are scarcely aware that they heat with wood because smoke is almost never visible at their chimney top. We also know that [there are] people who don't care..."

The Frause team – which included members of Frause, a full-spectrum communications firm, and experts from Social Marketing Services, Elway Research and Zenith Diversity Services – used the 10 steps of social marketing, which included research, marketing planning and pilot project testing. The effort included stakeholder input, behavior analysis and pre- and post-survey results.

As a result of quantitative and qualitative research, the campaign targeted primarily white, middle-aged males who made average incomes, had some education, lived in rural communities and were open to changing their poor wood burning behaviors due to certain psychographic beliefs. The campaign defined this target as the Non-compliant, willing wood burner.



The defined solution was to get them to burn dry firewood that has been seasoned for six to 12 months and to observe burn bans posted in their communities.

It was determined that this target audience needed to hear the value of burning dry firewood and the importance of observing burn bans from their own perspective. The reasons they were interested in learning how to dry firewood was to get more heat, save money and work less. They were willing to observe burn bans to avoid fines (with a little philanthropy for their community).

They were not interested in making changes based on health messages. And, it was important to teach them how to dry firewood and how to observe burn bans.

The Is Your Wood Ready to Burn campaign was piloted in a small rural community in Tacoma, Washington, called Summit-Waller. The results of this campaign demonstrated that sharing these messages with this audience moves the needle.

Unfortunately, while most air quality communicators are trying to reduce the amount of time they spend in public outreach in communities, the campaign outcomes highlight that more grassroots (one-on-one) outreach is necessary. It takes time and energy to teach people how to properly dry firewood. Communicators also need to understand that health messages do not resonate with this audience.

Another important lesson is that the messages about drying firewood and observing burn bans are best delivered by an independent organization other than the air district. The target audience indicated they will listen to fire departments, community associations, natural resource experts or electric utilities. The messages also need to be found within the community through marketing materials, via community partners, at events and on the Internet. For the overwhelmed communicator, one implementation solution is to build a volunteer network of Master Burners – much like Master Gardeners and Masters Composters – who can help spread the messaging in local communities.

The Is Your Wood Ready to Burn campaign provides a strong communications foundation for reducing wood smoke, but there is more work to be completed within Washington state and in local jurisdictions to refine this communications outreach. Ideally, the state-level work should be completed and then the local jurisdictions can implement tactics in their communities to help build momentum across the state. It is important that all air districts are singing from the same songbook.

One important point is that this work targets the biggest offender: the Non-compliant, willing and frequent wood burner. Other audiences require different actions when it comes to communications. Air districts that approach their air quality issue communications in this segmented approach will find success comes easier when communicating in a target-specific manner. The Is Your Wood Ready to Burn campaign provides a step-by-step methodology for generating impact within an existing communications program.



Team

Client Team Members

- **Project Co-Leads**
 - Amy Warren, Puget Sound Clean Air Agency (Support)
 - Lisa Woodard, Spokane Regional Clean Air Agency (Lead)
- **Participating Agencies**
 - Laura Curley, Northwest Clean Air Agency
 - Dan Nelson, Olympic Region Clean Air Agency
 - Claudia Vaupel, U.S. Environmental Protection Agency – Region 10
 - Tami Dahlgren, Washington State Department of Ecology
 - Miriam Duerr, Washington State Department of Ecology
 - Dave Caprile, Yakima Regional Clean Air Agency

Frause Team Members

- **Project Manager:** Erika Schmidt, APR, Frause
- **Supporting Team Members**
 - Stuart Elway, Elway Research
 - Sue Gillespie, Frause
 - Amy Graham, Frause
 - Bailey Thompson, Frause
 - Nancy Lee, Social Marketing Services
 - Lee Mozena, Zenith Diversity Services

Campaign Location – Washington State

This campaign was implemented by the Washington subgroup of the Northwest Air Quality Communicators Group using funds allocated by the Washington State Department of Ecology and supplemental funds supplied by Olympic Region Clean Air Agency and Puget Sound Clean Air Agency. The air quality professionals who participated in this campaign were from air quality agencies throughout Washington state.



Background

In 2009, the Washington subgroup of the Northwest Air Quality Communicators Group (NWAQC) issued a Request for Proposal (RFP) related to wood smoke education.

The purpose of the proposed scope of work was to better understand the messages and actions that would motivate hard-to-reach residents to reduce residential wood smoke emissions. This aim was prompted by the outcomes of the Washington State Department of Ecology's (WSDOE) Wood Smoke Work Group. The work group's final report from December 2007 (*Reducing the Impacts of Wood Smoke from Home Wood Burning Devices – WSDOE 08-02-002*) advocated for a special effort to reach certain key audiences, including low-income people, non-English speaking people, neighborhoods with large numbers of wood smoke complaints, frequent users of wood burning devices and the general public. The WSDOE allocated \$196,000 to support a campaign to reach this intended target. The NWAQC was charged with managing this campaign, and the Spokane Regional Clean Air Agency became the lead agency with support from the Puget Sound Clean Air Agency.

The initial RFP defined the problem in clear terms: residential wood smoke is a major pollution issue in many communities throughout Washington state. Further, the RFP outlined that wood smoke pollution comes from wood stoves and fireplaces as well as outdoor burning.

According to the U.S. Environmental Protection Agency (EPA), there are 14 communities in Washington state that either fail to meet or are at risk of failing to meet the federal-based standards for fine particulates (PM_{2.5}), which includes wood smoke. For example, more than 50 percent of wintertime air pollution in Tacoma, Washington, is due to wood smoke, and Yakima, Washington, has experienced high levels of winter wood smoke.

While air districts within Washington state have implemented communications efforts around wood burning – and have for years – wood smoke remains an issue. Wood stove changeout programs conducted in core areas, such as Tacoma, have resulted in the removal of hundreds of old wood stoves, but the challenges around wintertime wood smoke remain.

Could it be that the economy is contributing to the problems? While there is no documentation that the economy is increasing wood smoke emissions, it is intuitively understandable that the current economic climate means people are spending more time at home and looking for ways to reduce their heating bills. Potentially more people could be burning wet firewood, and/or garbage, in order to stay warm.

With budget available, the Washington subgroup of the NWAQC sought a consultant team to design, develop and launch a comprehensive campaign that could inform and motivate behavior change to help solve the wood smoke challenge. The group intended that the behavior change could range from people burning more cleanly to changing their home-heating methods away from wood burning, and even making the home more energy efficient. Ultimately, the Washington subgroup sought to achieve a measurable outcome. The Frause team – led by Erika Schmidt, APR - responded to the RFP and won the Washington Wood Smoke Campaign assignment. The work started in November 2009 and ended in March 2011. The outcome of the effort is the Is Your Wood Ready to Burn campaign.



Original Assignment

The original scope of work provided in the RFP by the Washington subgroup of the NWAQC provided a succinct direction for achieving success. However, despite the initial direction, the Frause team RFP response recommended a modified scope of work. Eventually, the full work assignment changed to reflect the modifications.

The defining of the initial scope of work in relationship to the final plan is important because the comparison demonstrates that the step-by-step process of the Is Your Wood Ready to Burn campaign was an intricate process of refinement and deduction.

Scope of Work

- **Goal:** Hard-to-reach populations in Washington state reduce their wood smoke emissions.
- **Objectives:**
 - The Washington subgroup will better understand the messages and actions that will motivate hard-to-reach residents to reduce residential wood smoke emissions.
 - The subgroup will have conducted a public education outreach campaign that will change behaviors of hard-to-reach populations and protect local air quality.
 - The results of the campaign will aid subgroup members to reach hard-to-reach people.
 - Hard-to-reach audiences will understand to use cleaner burning practices to minimize smoke emissions.
 - All participating clean air agencies will gain data to use within their jurisdictions.
- **Target Audiences:** Define exact location of hard-to-reach audiences that includes low-income people living under 80 percent of the median income, people whose primary language is not English and people whose values and beliefs are based on a non-European background.
- **Task I – Research:** Compile existing research regarding wood burning behaviors and conduct additional research that informs the team how to better identify, reach, engage and motivate hard-to-reach audiences. These audiences might include persons for whom English is a second language, those with a cultural history of heating their homes with wood and those whose limited incomes prevent them from opting for cleaner heating choices.
- **Task II - Research Report:** Accumulate data from existing wood burning research, focus groups and potential influencers and develop a final report as well as a pilot project scope.
- **Task III - Creative Strategy:** Determine a creative strategy and prepare a creative brief for an education and outreach campaign based on (but not limited to) both previously completed and newly developed research findings.
- **Task IV - Budget Estimate:** Prepare a budget estimate for production of the education and outreach campaign elements and any recommended purchase of advertising approved by the project manager.



- **Task V - Education and Outreach Campaign:** Prepare a draft education and outreach campaign to implement the strategy that includes recommended messages, draft creative concepts, community outreach, advertising media and other potential partners.
- **Task VI - Implement Campaign:** Develop and implement the campaign.
- **Task VII - Program Evaluation:** Prepare and conduct a program evaluation and provide a written report of the results.

Modified Scope of Work with Social Marketing

The complexity surrounding the education goal coupled with the depth of experience held by Erika Schmidt, APR and the Frause team around wood smoke education and responsible wood burning prompted a modified scope of work using social marketing.

Schmidt's concern that ongoing traditional public education and outreach tactics had not previously resolved the wood smoke challenges provoked the need for new thinking about how to approach the behavior challenges.

For more than 15 years, Schmidt had worked in the field of responsible wood burning education for private and public organizations and had seen many campaigns create successful outcomes, but the ultimate solution for how to continuously improve neighborhood air quality still seemed elusive.

Many communities have benefitted when air districts have provided incentives for people to replace their appliances – sometimes offering up to full replacement value – or use cleaner burning fuels.

Yet, while wood stove replacement programs have resulted in emissions reductions in neighborhoods, some communities, such as the Tacoma/Pierce County area, continue to experience wood smoke problems despite a more than \$1 million investment in replacing residents' appliances. And, communications initiatives aimed at reducing wood smoke through cleaner burning techniques seems to fall on semi-deaf ears.

With limited resources and good intentions, Schmidt advocated for the use of social marketing to uncover the trigger that would get the hard-to-reach people in Washington state to help reduce wood smoke emissions.

The Frause response advocated that a social marketing approach could be a better use of resources and could change the thought process for future wood smoke communications efforts.



Why Social Marketing?

Social marketing is a process that applies marketing principles and techniques to influence target audience behaviors that benefit society, whether environmental or health related. Much like traditional marketing, the social marketing process helps communicators understand target audiences and what it will take for them to change their behaviors for good.

The art and science of social marketing is focused around a 10-step planning process that includes understanding the situation and the audience, and then digging into goals and objectives as well as barriers, behaviors, benefits, competition and price. This planning process also includes the development of a strategic marketing plan.

To implement the Washington State Wood Smoke Campaign with an eye towards social marketing, Schmidt partnered with Nancy Lee of Social Marketing Services. Lee is co-author of *Social Marketing: Influencing Behavior for Good* (Nancy R. Lee and Philip Kotler, 2008) and has implemented or designed many social marketing efforts.

Because social marketing is rooted in research, Stuart Elway of Elway Research was a key member of the team. And, the eye towards hard-to-reach audiences demanded the additional cross-cultural perspectives of consultant Lee Mozena of Zenith Diversity Services.

Revising the Scope of Work

New Ideas

The revised social-marketing-influenced scope of work advocated for hyper-local audience segmentation because of the potential size of the hard-to-reach audience in Washington state. In addition, the Frause team advocated for a simple messaging platform as well as minimal-cost solutions to address economic challenges.

Social Marketing Steps

According to Lee and Kotler (*Social Marketing: Influencing Behavior for Good*), the following steps are important when implementing a social marketing process:

- Step #1** Describe the Background, Purpose and Focus for the Planning Effort
- Step #2** Conduct a Situation Analysis
- Step #3** Select and Describe the Target Market
- Step #4** Set Marketing Objectives and Goals (Behavior, Knowledge, Beliefs)
- Step #5** Identify Audience Barriers, Benefits and the Competition
- Step #6** Write a Positioning Statement
- Step #7** Develop a Strategic Marketing Mix (Product, Price, Place and Promotion)
- Step #8** Determine an Evaluation Plan
- Step #9** Establish a Campaign Budget
- Step #10** Outline an Implementation Plan



Addressing Audience Size

With more than 23 percent of Washington residents potentially categorized as hard-to-reach, a hyper-focused market segmentation process was a means to increasing the potential for success.

In Washington, 720,415 people live in poverty in rural, suburban and urban communities and 916,891 speak a language at home other than English. There are 164 different languages spoken throughout Washington state. Reaching all of the hard-to-reach people in the at-risk communities, for less than \$200,000, was an unfathomable task.

The Frause team recommended segmenting the hard-to-reach audiences before digging into research to determine actual target demographics. Ideally, the Frause team felt that existing research could help identify the demographics of wood burners within the wood smoke polluted areas and could help categorize target markets by income, language and culture. It was also assumed that existing research could bring to light cultural information about burning practices. The idea behind tackling audience size first was to ensure that the social marketing work would provide the biggest impact.

Adding Six Steps

This new focus added six steps to the Washington Wood Smoke Campaign scope of work.

- **Team Brainstorm:** Bring all of the client team members together for a collaborative session to gather information.
- **Cross Reference Wood Smoke Areas and Demographics:** After the brainstorm, review high areas or concentrations of wood smoke in comparison to language/cultural/income demographics.
- **Categorize Target Markets:** Build on the wood smoke areas and demographic cross reference, categorize the target markets in problem wood smoke areas by language, income and culture to define the greatest air quality impact.
- **Message Acceptance Grid:** Analyze the potential message and the potential acceptance by each segment of the hard-to-reach audience.
- **Cross-Cultural Analysis:** Conduct a cross-cultural analysis to uncover the cultural barriers of each segment of the hard-to-reach population.
- **Implement Pilot Project:** Implement a pilot project instead of immediately taking the campaign statewide.

Economic Impacts

The economy is an influencing factor that made social marketing and the hyper-local approach more necessary. When it comes to home heating, common sense dictates that people have spent the last few years looking for less expensive ways to stay warm in the down economy. This means that they are potentially burning anything that they get their hands on – from scrap wood to trash to wet firewood. For



low-income people, burning clean has to be extremely low on the priority list. Based on this assumption, any recommended solution would have to be easy and cost-effective to implement.

Simple and Relevant Tactics

Early on in the campaign development process, Schmidt highlighted that getting people to burn cleaner in their current stoves or fireplaces would probably end up being the best option compared to replacing appliances or considering weatherization. By simplifying the message, Schmidt indicated that the potential for long-term behavior change would be more plausible.

Refined Direction

Based on the Frause recommendations, the NWAQC agreed on changing the goal and objectives of the scope of work. While the original goal focused on educating hard-to-reach populations, the new goal was to educate people who burn wood for heat, and are not currently burning seasoned firewood, so that they will change their behaviors and use the proper burning habits. Frause concluded that more work was needed to determine who these wood burners might be and what demographic or psychographic characteristics defined them.

Additional objectives were clarified as well:

- Develop a statewide campaign to reduce wood smoke from residential wood burning throughout Washington.
- Pilot the campaign in one community.
- Use social marketing to encourage behavior change.
- Garner a clear understanding of the following:
 - Target audience demographics
 - Barriers that prevent the audience from making changes
 - Perceived benefits to changing behaviors

Further, the Frause team clarified that they would help the NWAQC design a public education campaign that would have long-term benefits while creating a road map to use without intensive resources. The campaign design needed to include a clear understanding of target audience demographics and what it would take for the audience to adopt new behaviors. The campaign also required testing the methodology through a pilot project as the first step to ensuring that suggested messages, creative, strategies and tactics could work.



Social Marketing Process

Team Brainstorm

Prior to landing on a campaign direction, the Frause team took the client team through the social marketing steps that began with the team brainstorm. All client team members participated. Lee and Schmidt co-facilitated the initial brainstorm session that dug into the individual client team members' proposed target audiences and worked to uncover any research that might exist. This session grappled with core areas designed to illicit group conversation about outcomes and big picture thinking.

- **Purpose:** What is the ultimate benefit of the effort?
- **Focus:** What issue or population is the campaign focus?
- **Situation Analysis:** What are the strengths, weaknesses, opportunities and threats of the situation? What similar efforts can inform the campaign?
- **Target Audience:** Who are the potential segments and how can they be prioritized based on size, prevalence, severity, ability to reach and ability to influence?
- **Desired Behaviors and Goals:** What are the potential behaviors and what are the priorities around willingness to change the behaviors?
- **Barriers and Motivators Research:** What are the barriers and what research can be conducted to uncover the barriers and the motivators?

Brainstorm Outcomes

- **Focus:** Through the brainstorm session, the client team agreed that the overarching goal of the campaign was to reduce wood smoke in communities where particulate levels were high. Specifically, the client team sought to determine how to increase proper burning techniques in order to reduce wood smoke.
- **Partners:** Additionally, the list of partners was extensive and included:
 - American Lung Association of Washington (ALAW)
 - Hearth, Patio & Barbecue Association (HPBA)
 - Northwest Hearth, Patio & Barbecue Association (NWHBPBA)
 - Washington State Department of Health (WSDOH)
 - Utilities
 - Organizations serving low-income residents
 - Cities/counties in non-attainment or impacted areas
 - Loggers or Forest Service workers
 - Retailers
 - Hearth products manufacturers
 - Realtors



- **Strengths:** There were a number of strengths listed by the team ranging from knowledge and technical expertise to existing outreach techniques, management buy-in and funding.
- **Weaknesses:** The weaknesses included:
 - Lack of staffing and funding
 - Internal politics
 - Lack of current research
 - Diverse demographics
 - Differing partner interests
- **Opportunities:** However, despite the weaknesses, the team found a number of opportunities, such as:
 - Energy stimulus funds, tax credits and utility incentives
 - Wood stove changeout programs
 - Energy efficiency
 - Medical research about impacts of fine particulates
 - Grant money
 - New partners, such as home energy audit organizations
 - Legislature interest
 - Volunteer programs
 - Related health care costs
 - Potential to reduce ongoing costs
 - A good portion of Washington state is at risk
- **Threats:** The team defined a number of threats that could derail efforts:
 - Energy stimulus funding and tax credit
 - Fewer changeout programs due to lack of funding
 - Lack of resources to invest in changing appliances
 - Cost of firewood is low
 - Consumers have bigger worries than wood smoke
 - Consumers don't believe that wood smoke is a problem
 - Consumers think that wood smoke smells good
 - Consumers want to know why government is involved
 - Cultural traditions
 - Lack of gas lines/other fuels
 - People selling old stoves illegally
 - People using or selling unseasoned firewood
 - Idea that wood is carbon neutral/natural/renewable
 - Feedback from retailers that people love their stoves
 - Diversity of Washington state's population
 - The fact that old stoves never die
- **Prior Campaigns:** A number of clean wood burning efforts were discussed including:
 - EPA's Burn Wise campaign
 - Highway 16/British Columbia effort



- Environment Canada's Burn Smart campaign
 - Libby, Montana, wood stove replacement program
 - WSDOE's Wood Smoke Work Group
 - Darrington, Washington outreach
 - Tacoma, Washington, wood stove replacement program and outreach
 - NWAQC clean burning clinics
 - No Idle campaign
 - Spokane wood heating campaign
 - EPA focus group research (Tacoma and Dayton, Ohio)
- **Target Audiences:** While the team identified that there did not seem to be any quantitative research on wood burner demographics in Washington state, they believed that there were a few different target audiences to consider in this conversation:
 - Low- to middle-income families whose primary heat source is wood
 - Tribal families whose primary heat source is wood
 - People who are frugal and for whom wood is a primary source of heat
 - English or Spanish speaking families who grew up heating with wood
 - Families with children or medical issues
 - People 25 to 60 years of age
 - Middle-income people who own their own homes and who like to burn wood to cut down their heating bills
 - Low-income people who heat occasionally with wood
- **Behaviors:** The two behaviors identified most frequently as potentially impactful were to encourage consumers to use only dry wood that has been split, stacked and properly covered for at least one year and to check chimneys for smoke after twenty minutes. Other positive behaviors that would contribute to clean wood burning by residents included:
 - Opening the damper
 - Adding space between logs
 - Converting to a cleaner device or cleaner fuel
 - Checking and obeying burn bans
 - Having chimneys cleaned annually by a certified professional
 - Using clean newspaper or dry kindling to start a fire
 - Building the right fire (provide explanation)
- **Research:** During the brainstorm session, the group considered where to conduct the research and the criteria for selecting focus groups. With the hard-to-reach populations still on the team's minds, the team intentionally discussed focusing on four areas in the state that had an urban-rural mix and a cross-cultural focus (English, Spanish and Russian):
 - Yakima (representing Central Washington and Spanish speaking areas)
 - Port Angeles or Vancouver (representing more rural Western Washington)
 - Tacoma (representing the I-5 corridor and Russian speaking areas)
 - Spokane (representing urban and Eastern Washington)
- **Competition/Price:** While the team did not discuss competition or price, the Frause team started to consider that the competition was the opposite of the correct behavior, such as using burning



methods that generate excessive smoke and that price was the monetary outcome of choosing the desired behavior.

Continued Audience Refinement

After reviewing the brainstorm session outputs, the Frause team refined the ideal target audiences as:

- Lived in a community where particulate levels are monitored
- Used wood burning as the primary source of heating
- Had children younger than 18 years of age
- Earned middle to low incomes
- Ideally spoke English, Spanish or Russian

Supporting Data Research

To learn more about the target audience and to verify the client team assumptions, the Frause team continued to search for demographic data on wood burners in Washington state. The questions that the Frause team sought to answer in the search for supporting research were:

- Where does the target audience live?
- What are additional demographic or psychographic attributes of the target audience?
- Do the locations where the target audience lives help the team achieve the greatest air quality impact?

The following secondary research sources were reviewed in search of the answers to these questions:

- U.S. Census American Community Survey (ACS)
- EPA Focus Groups (Tacoma, Washington)
- U.S. Census Data for particulate matter affected areas
- Spokane County Air Pollution Control Authority, *Public Opinion Study*, Key Findings, June 1999
- Spokane County Air Pollution Control Authority, *Public Opinion Study*, Report of the Findings, March 22, 1993
- Northwest Clean Air Agency, *Columbia Valley Woodstove Project*, February 2009
- Washington Department of Ecology, *Reducing the Impacts of Wood Smoke from Home Wood Burning Devices*, Wood Smoke Work Group Report to the Governor and Legislature, as required by Substitute House Bill 2261 (2007)
- HPBA fireplace study

After conducting the secondary research analysis, the Frause team identified that there was not enough data to move forward without more research.

Quantitative Research Recommendation

When the Frause team and the client team met to review the research findings, the recommendation was made to implement a statewide quantitative telephone survey. This recommendation ultimately included the need for more budget dollars.



The available research provided a broad assumption of what was going on, but not enough to understand the culprit wood burners and to invite them to participate in focus groups. There was data available for wood burners who listed wood as their primary heat source, but not enough data to conclude these burners were the problem. As a result, it was advocated that it was important to know how the target audience was burning wood or how often they were burning. And, it was important to understand demographics, related behaviors and psychographics.

Lee consulted that the survey would allow the team to seek the barriers and benefits of the wood burner not using the right behaviors. The survey would also clarify who, within the population, was open to change and who was not. Lee also defined the importance of understanding who was doing the right job burning wood (what she labeled a “Compliant”) and who was not doing the right job (otherwise known as the “Non-compliant”).

After these conversations, the Frause team and the client team agreed on the behavior objectives. The team discussed what was needed to further define primary heat source. The team discussed the qualifications for survey completion and determined the need to garner input from a technical person with an air quality agency. To fund the research, the group concluded that participating air districts could supplement the overall budget.

After defining the need for quantitative research, the team homed in on the campaign target audience as the Non-compliant, willing and frequent wood burner instead of the general hard-to-reach target audience.

Statewide Telephone Survey

The statewide telephone survey was built around a number of factors that included defining the frequent wood burner, target audience ideas and triggers that impact a wood fire and behaviors.

- ***Defining Frequent Wood Burner:*** The first step in preparing for the statewide telephone survey was to define what was meant by a frequent wood burner. The team consulted with Kathy Himes, technical analysis manager at the Puget Sound Clean Air Agency. Himes defined the frequent wood burner as someone who has a wood fire four or more times a week.
- ***Target Audience Ideas:*** With this feedback, the target audience profile was further refined to:
 - Lived in a community where particulate levels exceed standards
 - Used a wood stove, fireplace insert or fireplace to burn wood
 - Used wood burning as the primary source of heating (based on their perceptions)
 - Had children younger than 18 years of age
 - Earned middle to low incomes
 - Ideally spoke English, Spanish or Russian
 - Burned wood more than four times a week in the winter months
- ***Triggers that Impact a Wood Fire:*** The triggers that move someone from Compliant to Non-compliant (implementing all the behaviors versus not implementing the behaviors) were provided by the NWHPBA leadership and master wood burning trainer Zigi Gadmoski. Before consulting the entire list of stakeholders, the Frause team reviewed a suite of different responsible wood burning materials and developed a comprehensive list of behaviors that experts purported were the key to reducing wood smoke. The materials were from the EPA (Burn Wise), HPBA, NWAQC,



Northwest Clean Air Agency, Olympic Region Clean Air Agency, Puget Sound Clean Air Agency, Southwest Clean Air Agency, Spokane Regional Clean Air Agency and the Yakima Regional Clean Air Agency. The Frause team shared the list of potential behaviors with NWHPBA leadership and Gadmoski. These technical experts identified that the trigger that can turn a smoky fire into a low-emission wood fire is the use of seasoned firewood. According to Gadmoski, anyone can use seasoned firewood to produce a low-emission fire in either an uncertified wood stove or an EPA-certified appliance. However, any appliance will more likely produce a smoky fire if wet firewood is burned. The same issue applies to fireplaces. Add a fuel that has minimal moisture content – otherwise known as dry or seasoned – and the average person can produce a low-emission wood fire. The data gathered from NWHPBA and Gadmoski helped to refine the behaviors that would be examined in a statewide survey.

- ***Behaviors of Focus:***

- Using seasoned firewood – split, stacked and allowed to dry (or season) for at least six months (six months was chosen instead of a year because the group determined that it was more realistic to get people to dry firewood for this length of time)
- Building a small initial fire with small dry kindling and a few logs
- Starting a fire with the damper fully open
- Burning the fire to get the vent/stack hot for proper draft before adding more logs (length of time will vary depending on stove type)
- Adding the right mix of air by adjusting the damper
- Adding logs as needed, while keeping enough room between the logs and not overloading the stove

- ***Additional Behaviors:***

- Checking for burn bans before burning and following local burn bans
- Having the chimney cleaned annually by a certified sweep
- Having the wood stove maintained annually to make sure no smoke leaks inside the home
- Considering replacing a current wood stove with a newer model
- Removing extra ashes before starting the fire, but leaving a bed of ash

Survey Developed

Based on this feedback, a draft survey was developed. Using the philosophies adopted through the communications process, the survey was then shared with a comprehensive list of stakeholders identified through the WSDOE Wood Smoke Work Group process and as a result of years of collaborative clean-burning partnerships.

Stakeholder Involvement

Stakeholders have been – and will always be – a main component of the public education process for air quality communicators. With complex messages and limited resources, it was important for this campaign that these stakeholders join the conversation to help build and champion the message.



In the instance of this campaign, there were opportunities created for stakeholders to get engaged in the development of the effort. It was essential that the stakeholders understood the campaign methodology. It was also important that they felt comfortable with providing their contributions/feedback to the effort.

Invited Stakeholders

The stakeholders – in addition to the client team – invited to participate were:

- ALAW
- HPBA
- NWHPBA
- EPA – Office of Air Quality Planning and Standards
- Puget Sound Energy
- Washington REALTORS
- King County Association of REALTORS
- Duraflame, Inc.
- WSDOH

Feedback Process

The process for garnering stakeholder involvement and feedback included:

- Generating short email/letters to invite the stakeholders into the process
- Holding group informational calls
- Conducting individual follow-up telephone calls
- Providing ways that stakeholders could get involved in the campaign
- Generating notes for feedback

Stakeholder Feedback

The stakeholder feedback gathered was valuable and helped update the survey questions. New elements were included into the survey such as:

- The age of the appliance
- If anyone in the home has asthma
- The ability for people to be included in the future focus groups
- The addition of hearth retailers as firewood suppliers
- The need to split out scrap lumber from lumber from pallets
- Clarifying that wood is split before being stacked
- Modifications around the disadvantages versus advantages of wood burning
- Modifications so people don't think they can close a damper on a fireplace while a fire is burning
- Clarifying where people go to check for burn bans before they burn
- Clarifying airflow versus damper language for a wood stove
- The question of where someone gets his/her news or information



Stakeholders provided feedback on the survey that in the end was not included due to budget or strategic misalignment. However, the feedback did provide a valuable perspective on the process and stakeholders' needs.

The feedback not included in the final survey was:

- Method of stove installation (DIY or professional)
- Addition of incentives to obtain higher level of involvement (due to anonymity)
- The importance of highlighting the level of effort needed to burn wood

The stakeholders, the Frause team and the client team discussed additional important questions, such as: the application of data, tallying non-relevant data, honesty of answers, survey participants' education, negativity of willingness questions, accuracy of survey flow and psychographic questions.

Research in Play

Fielding the Quantitative Survey

The survey implementation was conducted by Elway. He fielded the survey to 400 heads of households in Washington state using the final target audience criteria.

Because non-English speaking people were a priority audience, the survey was translated into Spanish. Bilingual interviewers were available to take any calls with Spanish-speaking households. Spanish was selected as the one language that the budget could support. This was important to the process considering that the original intent of the project was to "reach certain key audiences, including low-income people, non-English speaking people, neighborhoods with large numbers of wood smoke complaints, frequent users of wood burning devices and the general public." Unfortunately, with limited budget dollars, no additional translations were possible.

Survey participants were selected by random-digit dialing in residential telephone prefixes in the state. The random-digital dialing was supplemented with a random sample of cell phone numbers. The margin of error on the survey was plus or minus five percent.

Trained, professional interviewers conducted all the interviews from a central call center. Up to four attempts were made to contact a head of household at each number in the sample before a substitute number was called. Bilingual interviewers also called back Spanish-speaking potential respondents.

Targeted Behaviors

1. Burn: Don't burn scrap or trash
2. Burn: Remove ashes
3. Burn: Start with dry kindling
4. Burn: Damper open
5. Burn: Ensure flue is hot before adding logs
6. Burn: Adjust air flow
7. Burn: Space between logs
8. Burn: Check burn ban
9. Burn: Observe burn ban
10. Storage: Stacked firewood
11. Storage: Split firewood
12. Storage: Off the ground
13. Storage: Covered
14. Storage: Dry for six or more months.



Quantitative Survey Outcomes

The survey data revealed that the demographic characteristics of the non-Compliant, willing and frequent wood burner in Washington state were:

- More male than female
- Caucasian
- Lived in a rural environment
- 36 and older in age
- Made \$25,000 - \$75,000 in annual salary
- Had at least a high school education
- Had children or did not have children (doesn't make a difference)

There were 25,406 households called through the survey. Calls were made to 39 counties in proportion to their percentage of the state population. Interviews were completed in most of the counties. Of the 25,406 households called, 8,003 households were contacted and 4,527 began the interview. Within the pool of households interviewed, 24 percent, or 1,098, had wood-burning appliances and 36 percent, or 400, of those households burned wood four plus days per week. The number of households that burned wood for heat in Washington was 181 or four percent of all households. These estimates of wood burning in the survey were consistent with the ACS of 2008, which estimated that six percent of Washington households used wood as their primary heat source. Further, frequent wood burners believed they were doing the right activity already, but they were open to learning new information to make their wood burning better.

These wood burners did not see air quality as a problem at all. And, they did not connect their wood burning to health problems. Reducing wood use, work time, inconvenience and expense were all good reasons to improve wood burning, and these frequent wood burners were more motivated by their own needs versus environmental impacts. The respondents in the survey claimed to be willing to change their behaviors if they only had to make simple changes. They also were readily open to suggestions for better storage.

Other data highlights garnered from the quantitative survey included:

- One in four of the Washington households contacted had a wood burning appliance.
- One in 10 said they burned wood four times a week or more in the fall and winter.
- Half of the frequent burners were compliant in 11 of the 14 best-practices behaviors.
- The highest compliance was for stacking wood.
- By the most stringent standards, few respondents were compliant with the burn practices and most were compliant with the fuel and storage practices.
- Other motivators to cleaner burning were mentioned more often in the Non-compliant's own words, including inside air quality, the amount of work involved in wood fires, general inconvenience and cost.
- Most storage, Non-compliance were positive about proposed behaviors.
- Only one in 10 of the storage Non-compliance was less than very willing to make each individual suggested change.
- Only six in 10 reported proper seasoning of wood.
- Fewer than half complied with all five storage practices.



- The most common source for more information on burning and storage was the Internet, by more than one out of three of the non-storage compliants.
- Most frequent burners observed each compliant practice when burning their fires.

NOTE: It is important to note that this data does not reflect the specific needs of Hispanic and Native American populations in Washington State that are impacted by wood smoke or members of those communities that are producing the pollutants. Because of the almost non-existent response level of these groups, further research is required to determine the specific demographics of frequent burners in the specific communities.

Behavior Analysis

With 14 different potential behaviors on which to focus, and with a desire for a simple and easy-to-implement message, the team knew there had to be a strict level of prioritization added to the behaviors.

With an eye on the survey data, Lee took the client and Frause teams through a behavior priorities analysis that helped clarify behavior impacts. The trigger of burning seasoned firewood was pre-defined, but the question remained: “What did the frequent wood burner need to do around the storage and burning of firewood to make a difference?”

Lee’s analysis process walked the team through the behavioral impact on air quality and the audience’s willingness to change behavior. Team members prioritized both categories with a high, medium or low ranking. The willingness behaviors for splitting, stacking and storing were defined by the survey results so the ranking of the remaining behaviors required a best guesstimate.

According to Lee, the one clue to assigning willingness was the percentage of people already doing the behavior. If most people were doing it, then the opportunity was low but the willingness score was probably high. For example, 85 percent of households from the survey said they kept the damper open, indicating that there was a high willingness to do the behavior. Lee added that this barrier was probably low in that those not keeping the damper open may have simply forgotten to do so or may be unaware of the need.

Using this analysis process, burning firewood seasoned for six months or more and observing burn bans were defined as the two priority behaviors to test for the campaign.

Summary Target Audiences and Behaviors

To gain clarity around target audience profile, the two behaviors were analyzed against the survey results.

- ***Burn Only Seasoned Wood:*** For this behavior, the target audience was Non-compliant, willing, and frequent wood burner who would season (stack, cover and store) their firewood for six or more months. There were some simple barriers to implementing this behavior: they thought they were already doing it correctly, they didn’t want or couldn’t wait six months and they thought they were already buying seasoned firewood. The target audience understood the benefit to burning seasoned firewood: getting more heat, taking less work and saving money. They were also open to the benefit that a seasoned-firewood fire is better for their family’s health, except that was not



their main interest. This target audience is more likely to be very concerned about air quality than others surveyed. They are more likely to live in rural communities and they have no unique behavior characteristics related to environmental beliefs.

- **Observe Burn Bans:** This behavior was best aimed at members of the target audience for whom wood was not the sole source of heat. The perceived barriers for this behavior was that they didn't know when there was a burn ban or they were not sure how to get information about bans. They also didn't believe that their burning could make a difference.

Creative Development/Focus Groups

With the data generated from the statewide telephone survey and the behavior analysis, the Frause team developed creative messages and design concepts. These concepts were then tested in two focus groups to help develop the pilot project and the marketing materials.

Creative Concepts

There were four concepts created, but only three were selected for the focus group debut. They included:

- **Concept A – Is Your Wood Ready?**
 - Message: Don't Burn Wet Firewood
 - Subhead: Dry Wood = More Heat
- **Concept B – Stack Cover Hold**
 - Message: Don't Burn Wet Firewood
 - Subhead: Dry Wood Burns Better
- **Concept C – What Are You Smoking?**
 - Message: Don't Burn Wet Firewood
 - Subhead: Smoky Fires Waste Money

Each creative concept had a different look and feel. The concepts focused on the seasoned wood behavior. It was decided that the burn ban behavior would be tested through a line of questioning instead of the use of a graphic image. The test concepts contained a logo or image, a primary message and a secondary message or a subhead. Instead of highlighting the positive behavior, each creative concept focused on what the audience should not do, such as do not burn wet firewood, and then offered a reason why it was a good idea not to refrain from taking that action. More heat, better fire, less work and a smoky fire were all offered as different message options.

Focus Group Details

The focus groups were held in Tacoma and Port Angeles, Washington. The participants were screened to ensure they matched the target audience profiles for each target behavior. Elway also conducted these two focus groups. During the focus groups, Elway probed about the participants' wood burning habits and asked about how often they burned and where they got their wood as well as how their firewood was stored. Additionally, he questioned the participants' knowledge and impressions of burn bans as well as their reactions to the creative and overall messages and probed to determine the most credible source to



deliver the messages. There were nine participants in the Port Angeles focus group and 12 in the Tacoma focus group. Besides the qualifying questions around storage and burning of firewood, recruiters sought to maintain a balance of gender, age and income. All participants were paid an honorarium of \$100.

Creative Concept Visuals





Focus Group Outcomes

The outcomes of the focus groups provided further messaging refinement. Using the draft message and creative concepts, Elway uncovered core pieces of information about the target audiences' behaviors, barriers and message acceptance.

- **Topline Results:** The following were the topline results related to the target audiences:
 - They perceived themselves as veteran, knowledgeable wood burners
 - They burned a variety of wood sources – firewood, lumber, etc.
 - They dried their wood for different lengths of time, sometimes only one or two months
 - Some mixed wet firewood in with the dry to keep the fire going
 - Stacking and covering firewood seemed to be prevalent
 - They learned about storage from their parents or grandparents
 - They burned firewood to save money
 - They believed that wood is better heat – hotter and quicker, and more localized
 - They believed that dry firewood was an understandable term versus seasoned
 - They had confusion around burn bans and the information was not taken seriously
 - Technical burn ban information was ineffective and seen as too complicated or not relevant
 - Air pollution and information on opacity levels were hard to understand, and many people thought that the new appliances alleviated the problem
 - Health messages were very problematic
 - People saw other peoples' burning as the problem and not their own
 - Firefighters or loggers, and not government officials, were the most credible people to deliver the message
 - They were resistant to government education efforts
 - Based on the focus groups, the team learned four key lessons:
 - Focus the message on more heat and less work, versus health and air quality impacts
 - Find credible non-government partners to share the message
 - Storage of firewood for six months is probably the biggest gap in the target audiences' knowledge
 - Education about health is a barrier to information acceptance
- **Messaging Feedback:** The feedback on the pre-constructed creative concepts was illuminating. There was a lack of agreement on favored creative and comments were varied.
 - Concept A – Is Your Wood Ready? This was the favorite and people thought that it made sense. It clarified that dry firewood equals more heat. The original visuals did not work, but the messaging and the logo did work.
 - Concept B – Stack Cover Hold. This concept received completely different responses from the Port Angeles and Tacoma focus group respondents. People in Port Angeles responded negatively, while respondents in Tacoma responded favorably. The logo was confusing. Some found the artwork dark and hard to read. Beyond the logo, the respondents in Tacoma did not like the word hold, nor did they like the colors and they did not think that the messages related to the image. The Chuck the Woodchuck cartoon wasn't relatable to those who burn wood, and the final word was that it seemed to be a waste of tax-payer dollars.
 - Concept C – What Are You Smoking? The two groups were split on this concept. The Port Angeles respondents liked this concept more than the Chuck concept. They thought that it



was more grown-up and seemed to impart money savings. Yet, almost everyone in the Tacoma group did not like this creative concept.

- **Message Delivery:** The groups were very opinionated about who should deliver the message. They felt that those with more knowledge were the most credible delivery sources. To this audience, “most knowledgeable” translated into the fire department or fire marshal. There was little support for the hearth retailers, health department, medical professionals or the air district. The audiences were split on whether media personalities were credible. The groups discussed the importance of avoiding sponsors with an agenda, yet not everyone was against the ALAW.

Final Creative

With the completed research, the Frause team finalized the creative concept and messaging. The Is Your Wood Ready to Burn logo was selected, with modifications.

The final messaging included:

- Burn dry firewood
- Dry firewood = more heat
- Dry firewood for six or more months
- Observe burn bans

The final creative was created based on this information.





Final Audience, Messages and Information

Audience

The final description of the Non-compliant, willing and frequent wood burner was defined as follows:

- More male than female
- Lived in a rural environment
- 36 and older in age
- Made \$25,000 - \$75,000 in annual salary
- Caucasian
- Have at least a high school education
- Have children or do not have children
- More likely to be concerned about air quality
- Although they thought air quality is good or excellent, more concerned with other things besides air quality
- Thought wood smoke is an insignificant cause of air quality issues and that it does not impact health
- Not aware of family members with health issues (or so they think)
- Burned four plus times a week in open fireplaces, fireplace inserts or wood stoves
- Sole source of heat was not wood
- Don't always observe a burn ban

Additional information about the target audience included:

- Interested in saving money and wanted more heat
- Thought of themselves as knowledgeable wood burners
- Had respect for wood burning and a respect for the outdoors
- Did not like government intrusion in their lives
- Saw wood burning as a right
- Some cut own wood and others bought it
- Might only store wood for one to two months
- Might mix in wet wood
- Might burn some garbage or scrap wood
- Most said they stored, stacked and covered their firewood

Core Messages

The final messages for the campaign were to burn dry firewood and to observe burn bans. In terms of delivering the message, the research indicated the importance of using terms that are quickly identifiable on billboards.

- Burn dry firewood
 - Dry firewood = more heat
 - Dry firewood for six months or more
- Observe burn bans



Benefits

According to the data, the core benefits to burning dry firewood and observing burn bans that would motivate the target audiences include:

- Burn dry firewood
 - More heat
 - Less work
 - Saves money
 - Better for family's health
- Observe burn bans
 - To avoid fines
 - For the health of the community

Behaviors

The core behaviors that the target audience would follow to minimize wood smoke were determined as:

- Burn dry firewood
 - Stack wood in a manner that will allow proper circulation
 - Cover the wood pile to protect it from rainfall (without sealing in the moisture)
 - Store wood for at least six months before burning it
- Observe burn bans
 - Check air quality status through air district website
 - Do not burn wood if a burn ban is in place

Barriers

The barriers that could impede people from doing the right behavior to reduce wood smoke were:

- Burn dry firewood
 - Think they're already doing it correctly
 - Don't want to and can't wait six months
 - Think the wood they purchased is already seasoned
- Observe burn bans
 - Don't know when there is a burn ban
 - Not sure how to check
 - Don't believe burning makes a difference



Competition

The behaviors that the target audience prefers to implement are:

- Burning available firewood, no matter how dry
- Burning trash or lumber
- Not observing burn bans

Message Delivery

When it comes to how to deliver the message, the data indicated that credible needed to share the message and that the information needs to be on the Internet.

Testing it Out – Pilot Project Design

Location/Summit-Waller

The pilot project was designed based on the research. Based on availability of resources, the pilot project location was to be selected within the Tacoma/Pierce County area. The Frause team and the client team researched a community that would fit the target profile. Summit-Waller was selected because it is a rural area and its demographics seemed to fit the target audience profile.

Summit-Waller is comprised of a little more than 1,200 households in an area located on the edges of Tacoma and Puyallup, Washington. It has a mix of rural and suburban households, a history of wood smoke challenges and a number of older residents (as indicated by residents of the area and the presence of an over-55 community).

Objectives

There were a few core objectives for the pilot project:

- The behavior objectives were to increase the number of people burning dry firewood instead of wet firewood and observing burn bans.
- The knowledge objectives were to increase the number of people who knew they needed to store firewood for more than six months before burning it and that burn bans are in place to protect the community.
- The belief objectives were that people understood that dry firewood creates a hotter fire and that they could avoid fines by observing burn bans.

Strategies

Using the Is Your Wood Ready to Burn creative and messaging, the strategic elements of the pilot project included establishing credible delivery methods, using storytelling, generating marketing materials, creating incentives and prompts and implementing hands-on training.



The following were key guiding principles of the pilot project design:

- Demonstrate how to properly dry firewood
- Show side-by-side burning comparison of burning wet firewood versus dry firewood
- Demonstrate how to have an efficient fire
- Offer incentives to entice participation
- Partner with a fire department

Pre- and Post-Project Surveying

Before setting out to implement the pilot project, pre- and post-project surveying was defined as a core project component. The Frause team research lead, Sue Gillespie, purchased a list of 1,262 household contacts within Summit-Waller. A survey was developed and one-on-one telephone survey calls were conducted with the heads of households in the Summit-Waller neighborhood before the implementation began. And, post-survey calls were scheduled for after the implementation was complete. The post-survey included additional questions about where people had seen the messages.

Tactics

Since the research indicated that the target audience was open to instructional information about how to get more from their fires, the Frause team designed a multi-step tactical implementation program to achieve the pilot project objectives. The final project was different from the original pilot project outline.

- ***Find Credible Partners:***
 - Fire department (Central Pierce Fire & Rescue)
 - Community association (Summit-Waller Community Association)
 - Natural resources experts (Pierce County or City of Tacoma Natural Resources Department)
 - Electric utilities (Tacoma Power)
- ***Use Supporting Infrastructure:***
 - Mid-county Community Center
 - Waller Road Grange
 - Waller Elementary
 - Hearth tool suppliers
 - Firewood suppliers
- ***Utilize Storytelling:***
 - Step-by-step photos and instructional guide to doing the right steps
 - Visually focused, hands-on presentations
 - Simple materials with limited copy (focus on tradition and maintaining tradition)
- ***Generate Informational Materials:***
 - Single webpage
 - Billboards
 - Banner



- Direct mail to all households
 - Posters
 - Fliers
 - Newsletter copy
 - Utility bill stuffer
 - Branded butane lighters/matches
 - Photo holders
- **Conduct Events:** Provide demonstrations on how to season wood to produce the most heat and offer free incentives and handouts.
 - Illustrate how to season wood properly
 - Illustrate what not to burn
 - Show side-by-side comparisons of burning wet firewood versus dry firewood
 - Show examples of wet wood moisture amount versus dry wood moisture amount
 - Hand out firewood permit information
 - Provide basic information on burn bans
 - Offer fire department tours/sit in the fire truck
 - Create a dry firewood testing station
 - Implement a raffle (use gears and gadgets)
 - Provide a side message about burning more efficiently in a fireplace
 - **Implement Community Promotion:** Find venues for sharing the message within the community and create opportunities for training.
 - **Offer Incentives:** Create easy ways to entice people into the pilot project and to provide their contact information. Generate a raffle to give away moisture meters, firewood-stacking carriers, gloves, firelogs, wood sheds and cords of wood.
 - **Conduct Master Burner Training:**
 - Develop the training program and the Master Burners Code of Conduct (similar to the Hunter's Code of Conduct)
 - Sign up ten households to meet with and guide through proper wood drying process
 - Give a cord of wood to each household
 - Certify them as a Master Burning household
 - Pre- and post-test the group
 - Sign them up at the open house



Pilot Project Implementation

Timeline

The pilot project was conducted in Summit-Waller from November 2010 through March 2011. The pilot project was implemented as outlined except for the Master Burner element. The primary partner for the project was Pierce County Fire & Rescue. An overarching direct marketing and promotion program was established and an open house was planned. An additional training workshop and a community presentation were added as the project progressed.

Direct Marketing and Promotion

The materials developed for the pilot project included a website, banner, billboard, A-boards, flyers, posters, tips sheets, fact sheets, incentives and direct mail. All of these materials used the creative. Three direct mailers were produced and mailed to all households in the Summit-Waller community in November and December of 2010 and January 2011.

**IS YOUR WOOD
READY
TO BURN**  **Dry firewood
= more heat**

**You Are Invited
“Get More Heat
from Firewood”
Community Event**



Event questions can be directed to
Bailey Thompson at **206-352-6402** or
BurnDryFirewood@gmail.com.

Central Pierce Fire & Rescue Station #67
8005 Canyon Rd E
Summit-Waller
Saturday, November 20, 2010
1 p.m. to 5 p.m.

- » Burning demonstrations
- » Firewood storing tips
- » Latest tools and gadgets on display
- » Prizes and giveaways
- » Enter to win **FREE** cords of firewood and the latest fire building tools
- » **FREE** Firewood Storing Kit instructions
- » Snacks and games

Funded by the Washington Department of Ecology
and its partner air quality organizations, including the
Washington Clean Air Agencies.

Want more heat?

Season firewood for at least
six months before burning.

For details go to
www.BurnDryFirewood.com

**Is your firewood
ready to burn?**
Bring a piece and let's test it!

Marketing Materials



BurnDryFirewood.com: The website featured information about firewood drying and burning, including firewood drying tips, best burn practices and a Master Burner Code of Conduct. The website reinforced the campaign messages.



Banner: The 4' x 10' banner for display at events was printed with the logo, core messaging and the web address.



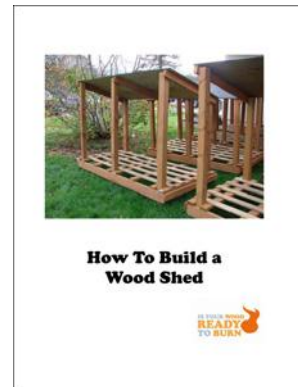
Billboard: Located on a main road in the Summit-Waller community, the billboard featured the Is Your Wood Ready to Burn logo, message and web address.



A-Boards: Displayed at intersections throughout Summit-Waller, the A-boards featured similar information as the billboard.



Community Event Flyer and Poster: Posted in locations throughout the Summit-Waller community, the flyer and poster shared information about available events.



How to Build a Wood Shed Guide: This four-page folded guide detailed the eight-step process to construct a wood shed. The guide included photos of a finished wood shed, and included the building stages, as well as a time and materials list.



Burn Ban Fact Sheet: This two-sided sheet included facts about indoor wood burning bans and restrictions; the other side featured information on how and why to follow burn ban rules.

Direct Mail # 1 – Get More Heat from Firewood: This mailer was sent to all households in Summit-Waller, and provided information about a community event.



Direct Mail # 2 – Season Firewood: The second mailer featured the message “Season firewood for six months or more before burning.” The key message “Dry firewood = more heat” and the web address were also reinforced.

Events

The pilot project included the implementation of three events: a community event, workshop and a presentation at an existing event. The events were titled Get More Heat from Firewood.

Event #1 - Get More Heat from Firewood Community Event

The inaugural Get More Heat from Firewood community event took place Saturday, November 20, 2010, at the Central Pierce Fire & Rescue Station #67 in Summit-Waller. The event was an open house format and was held from 1 p.m. to 5 p.m. It was open to the public and promoted throughout the Summit-Waller area in the weeks preceding the event.

Event preparation primarily focused on coordinating and consulting with partners, including the client team and Central Pierce Fire & Rescue. The Frause team purchased firewood accessories for event displays as well as dry firewood from a local retailer, A & A Wood Stoves, to accompany two wood shed displays (one wood shed was built on site). Zigi Gadmoski – a wood burning expert and trainer – was hired to conduct a wet firewood versus dry firewood burning demonstration. The team determined that there would be five different booths at the event: fire safety, dry firewood information, clean burning tips, clean heat demonstrations and burn ban information.



Direct Mail # 3 – Observe Burn Bans: The third mailer featured burn ban information such as steps to take before building a wood fire, ways to check for a burn ban and information regarding burn ban fines.





Partner collaboration was essential in the planning and execution of the community event. Throughout the planning process all partners were consulted.

In order to publicize the event and reinforce the messages, several collateral materials were produced and distributed in the Summit-Waller community, including:

- Direct mail pieces for distribution to neighborhood households
- Posters for display in key locations throughout Summit-Waller, including the library, post office and local businesses
- Signs that directed people to the Central Pierce Fire & Rescue Station #67
- A-boards posted around the community

The primary focus of the event was the burning display that illustrated what happens when burning dry firewood and what happens when burning wet firewood. The display allowed attendees to witness first-hand benefits of using dry firewood, such as a more robust fire and less smoke. The trainer highlighted that less firewood was required to generate the fire by using dry firewood versus wet firewood. The event also featured hands-on demonstrations about how to build a wood shed.

A raffle drawing was offered as an incentive. Prizes included moisture meters, firelogs, fire starters, fireplace toolkits, gloves, and two wood sheds with firewood included.

Additionally, several giveaways and informational materials were distributed to attendees including branded firelighters, firewood drying tip sheets, burn ban fact sheets, wood shed building plans and woodstove replacement program flyers.



Event #2 - The Get More Heat from Firewood 101 Workshop

The Get More Heat from Firewood 101 workshop, held on January 19, 2011, at a Puyallup fire station, was a training format. This event was designed for those who had a keen interest in learning tips and best practices, and who might be interested in sharing and teaching that information throughout their community.

Preparation was primarily focused on inviting participants to the event. People who had expressed interest in learning more through the pre-test survey and the Get More Heat from Firewood community event were invited to attend.

An incentive was provided to encourage attendance and show appreciation for those who were willing to give their time to attend. The chosen incentive was a gift certificate for seasoned firewood at an approximate value of \$150 per person.

Event outreach was conducted through telephone calls and direct mail. As the event neared, an additional group of potential participants was invited using the Puget Sound Clean Air Agency's list from a nearby stove changeout program, the Tacoma-Pierce County Wood Stove Replacement Program.



In preparation for the Get More Heat from Firewood 101 workshop, a PowerPoint presentation was created to reinforce key messages. A one-page survey was developed for post-session distribution to gain information about the attendees' perceptions about the information presented. Additionally, firewood accessories were purchased for display, including firelogs, tarps, gloves and seasoned firewood. The same firewood and burn ban information that was provided at the Get More Heat from Firewood community event was shared at this event.

The same partners from the community event were involved in the preparation of the Get More Heat from Firewood 101 workshop. Several discussions were held to refine the Get More Heat from Firewood 101 presentation, including a call with the Washington State Cooperative Extension.

The training lasted for two-hours. It included an overview of best practices including a brief demonstration on how to check a piece of firewood for moisture using a moisture meter and a sample of the proper size for a piece of firewood. The second half of the session focused on burn bans, including where to find out if a burn ban is in place, how to address illegal burning and the role of clean air agencies in monitoring burn bans.

Throughout the session, attendees asked questions, responded to questions posed by the administrator and held a series of conversations about different burning topics. The presentation concluded by distributing a one-page survey to field impressions and information learned from the presentation.

A display table with fireplace accessories was set up for attendees. A packet of information was also distributed.

Event #3 - Mid-county Community Center Presentation

The final event was an informal presentation during a weekly senior luncheon on February 2, 2011, at the Mid-county Community Center in Summit-Waller. The presentation was approximately 15 minutes in length and covered tips and best practices as well as burn ban information. Approximately 80 people were in attendance.



The Get More Heat from Firewood 101 workshop PowerPoint was condensed and repurposed for the Mid-county Community Center presentation. The PowerPoint presentation was shortened to include just the basics on drying firewood and a few points on burn bans. There was no advance outreach for the event, as it was part of a regularly scheduled lunch meeting. The relationship with the Mid-county Community Center started with a series of talks in November and routine communication over the following months. The invitation to participate was the result of the outreach to the center director.

A large screen and projector were used to show the PowerPoint presentation and the speakers were equipped with microphones. The presentation opened with an overview of firewood drying best practices, which included a brief demonstration of how to check a piece of firewood for moisture using a moisture meter and a sample of the proper size for a fire log. This was followed by an outline of burn ban



information, including where to go to find out if a burn ban is in place. The presentation concluded by distributing a short survey to field impressions and information learned from the presentation. An information table similar to the other events was provided.

Pilot Project Outcomes

The pilot project did increase the number of people burning dry firewood instead of wet firewood and observing burn bans, although the data is anecdotal and based on conversations conducted during the events. The research for this project did not provide quantitative awareness tracking research. The project did demonstrate that it met the knowledge objectives of increasing the number of people who knew they needed to store firewood for more than six months before burning it and that they needed to observe burn bans. The project addressed the belief objectives that people understood that dry firewood creates a hotter fire and that they could avoid fines by observing burn bans. The event also showed a strong level of awareness around the messages and engagement with the materials.

Website Results

The Google Analytics results for www.BurnDryFirewood.com showed 261 visits for the time period of November 1, 2010, through March 1, 2011. There were spikes in the traffic that correlated to the dates of the direct mail drops. Of the 261 visits, 166 were absolute unique visitors and 68.97 percent of the visits were direct traffic.

Pre- and Post-Survey Results

Working within the pool of Summit-Waller households, callers spoke with 115 households in the pre-test and 128 in the post-test. In the pre-test survey, 52 percent of respondents said that wood that is stacked off the ground produces more heat than wood stacked in direct contact with the ground. In the post-survey, that number increased to 66 percent. In contrast, there was a 25 percent increase in the number of households that said firewood should be stored a minimum of six months before burning; 45 percent indicated this statement was true in the pre-test versus 70 percent who said it was true in the post-survey.

In addition, 52 percent of people surveyed in the post-survey remembered seeing materials that said dry firewood equals more heat. According to the survey data, 68 percent said they received information with this statement in the mail, 20 percent saw it on a billboard and 33 percent saw it on an A-board. In addition, 42 percent said they had seen “check for burn bans” in a variety of places, including a billboard, in the mail, and on an A-board (although that message was only on the website).

There seemed to be some confusion concerning the true and false statement that fire made from unsplit logs produces more heat than a fire made from split logs. More than 70 percent found it false in the pre-test while 52 percent found it false in the post-test. The population responding to the survey in both the pre- and post-tests was in line with the results of the statewide survey except that a significantly large population of respondents had wood burning appliances.

Event Results

The events had valuable results. It was evident that establishing new events and investing resources to set up events was too time and resource intensive for the expected outcomes. The information shared at



all of the Get More Heat from Firewood events proved effective according to the research data, especially the hands-on demonstrations of burning wet wood versus dry firewood. However, the cost and the negative environmental impacts of the wood smoke made duplicating this type of demonstration a challenge.

- ***Get More Heat from Firewood Community Event:*** This event attracted about 45 people. Using the 1,262 count for households in Summit-Waller, this is a three percent return on the direct mail and event promotion. Ten people signed up for training. Most of the people that attended said they heard about the event either through the direct mail or by driving by the event. This event did not have a survey mechanism, but conversations revealed the following:
 - People did not know the moisture content of their firewood
 - Many people didn't have a wood shed, but did store their wood off the ground
 - People were interested in how to get more heat out of the firewood
 - Many people understood the value of seasoned firewood, but weren't doing it
 - People said they would start to season their firewood for longer
 - People were open to discussing health after they knew we were not trying to sell them anything
 - People did not understand the specifics around burn bans but were interested to learn more
- ***Get More Heat from Firewood 101:*** 93 people were invited to the Get More Heat from Firewood 101 event, 13 confirmed and five people attended. The people who participated filled out a short written survey. The results of the survey were as follows:
 - Three people were very satisfied and two people were somewhat satisfied with the usefulness of the information
 - The same number of people liked the quality of the materials
 - Four people were very satisfied with the quality of the event, while one person said he/she was somewhat satisfied
 - Four people said they were more aware that firewood should be seasoned for six to 12 months before burning
 - Five people said they definitely agreed that they understood the steps for drying firewood
 - Five people said they had a better understanding of how burning wet firewood wastes heat, money and produces excess smoke
 - Five people had a stronger belief that burning dry firewood produces more heat
 - Five people understood how to comply with burn bans and that by doing so they would avoid a fine
 - Four people definitely agreed that they understood what it takes to burn firewood cleanly and one person said they somewhat agreed
 - Three out of five people were very likely to try the tips presented in the workshop and two said somewhat likely
 - Two out of five people were very likely to share the information presented during the workshop with friends and neighbors, while others were somewhat likely
- ***Mid-county Community Center Presentation:*** More than 80 people listened to the Get More Heat from Firewood presentation at the Mid-county Community Center and 49 people provided their responses via a quick written survey. The audience was primarily 55 years or older, and mostly Caucasian. This event was in conjunction with a routine luncheon held each Wednesday. The survey results were as follows:



- 90 percent of the respondents definitely or somewhat agreed that firewood should be seasoned six to 12 months before burning
- 85 percent said that they understood the steps for drying firewood
- 88 percent had a better understanding of how burning wet firewood wastes heat and money
- 88 percent had a stronger belief that burning dry firewood produces more heat
- 41 percent said they would try the firewood burning tips presented
- 66 percent said they would very likely or somewhat likely share the information presented with friends and neighbors

Campaign Outcomes

What did the Is Your Wood Ready to Burn campaign outcomes provide air quality communications professionals grappling with wood smoke issues? The answer is plenty. This ground breaking campaign makes it easier for air quality professionals to develop effective communications efforts that can directly affect neighborhoods impacted by wood smoke. In addition to resources and materials, the campaign provides a quick assessment of frequent wood burners in Washington state.

An air quality communications professional living in another state can still apply this information as long as additional testing and demographic comparisons are applied. Again, this information does not provide an adequate basis to assess non-Caucasian or non-English speaking audiences. It is advised that quantitative surveys or focus groups be developed to determine the same information for these audiences.

Available Information

The available information for air quality communications professionals from this effort includes:

- Target audience demographics for frequent wood burners
- Effective marketing materials
- Confirmed messaging that impact behaviors
- Suggested implementation plans – state and local
- Photography
- Outcome expectations

Key Lessons

This campaign offers some key lessons that are important to assess before new campaign initiatives are implemented in any jurisdiction.

- **Lesson – Hard-to-Reach Audiences are White Males:** The target audiences who are not implementing the behaviors, but are willing to make the change, are most likely white males with some specific demographic and psychographic characteristics. If air quality officials are interested in conserving resources, it would be wise to focus resources on targeting this population for the greatest impact.
- **Lesson – Dry Firewood is the Missing Link:** Replacing all the fireplaces and old wood stoves in a community will not have a significantly positive impact if the public doesn't understand that



they need to burn dry firewood and that they can improve the efficiency of their fires by following this best practice.

- **Lesson – One-on-One Outreach is Essential:** When it comes to wood burning, it doesn't pay to skip training and demonstrations. Delivering messages are important, but proving to people that it is possible to improve a fire by burning seasoned firewood takes instruction. With tight budgets, it is not unusual for air quality professionals to cut out direct communication with people. This campaign proves that is not a good step. The key is to be efficient with the how of one-on-one outreach.
- **Lesson – Once a Year Education is Not Enough:** Because it takes more than six months to dry firewood, it is wise to think about wood smoke mitigation communication as an annual project with four seasonal activities.
- **Lesson – Singular Messages for all Audiences is Not Effective:** While the primary outcome of this research is that health messages should not be the lead-in, these messages do play a role in the air quality communications professionals' world. Based on the mission of air quality organizations, health messages are important to share with the public when it comes to immediate impacts from air pollution (burn bans). The health messages can also be used when establishing partnerships and for legislative discussions.
- **Lesson – Just Saying “More Heat” is Not Enough:** One of the strongest points to come out of the campaign was a comment from a participant that the wet firewood versus dry firewood display should have a metric or BTU correlation. This campaign has a message that burning dry firewood equals more heat, but this is a point that can be further refined. It would be helpful to put a dollar figure on more heat. Avoiding a fine by observing burn bans is already clearly clarified.
- **Lesson – Need to Increase Recommendations for Drying Time:** Anecdotal comments from the communication and events provided perspective that people will season firewood for less time than recommended. A good idea is to increase the drying time recommendation to 12 months.
- **Lesson – Moisture Meters are Popular Giveaways:** One of the most interesting tools and incentives to come out of this campaign are moisture meters. These small devices (retail at \$25 or more) help people understand when their wood is dry and they entice people to learn more. They need to be the primary giveaway at all outreach activities. **NOTE: The Puget Sound Clean Air Agency was able to purchase moisture meters from China for less than \$10 per unit.**
- **Lesson – Retailers are Important Education Link:** Considering that hearth retailers are a core link to new wood burning appliances and because many sell seasoned firewood, it only makes sense to work with hearth retailers to help gather contact information from wood burners. For example, a hearth retailer could hand out a brochure that has an offer for a moisture meter in exchange for consumers providing their contact information to air districts.
- **Lesson – Firewood Sellers are an Issue:** The firewood sellers contacted for this campaign did not prove to be a reliable source of seasoned wood. One of the firewood sellers who agreed to sell firewood for the Get More Heat from Firewood community event had firewood but it measured more than 20 percent moisture. This firewood seller had promoted his firewood as seasoned, but



his system of storage did not keep the firewood out of the rain. A system of creating an approved list of firewood sellers would be a critical part of the marketing mix.

- **Lesson – Too Many Pieces of Information is Difficult to Digest:** With limited time to share messages and capture attention, a simplified package of materials is advised. Often, air quality communications professionals overload their booths with a variety of brochures. A better solution is to create a single packet with each relevant fact sheet and to only hand that packet out to the consumer. The brochure with the offer for a free moisture meter could be the lead document in the packet.
- **Lesson – Understand the Signage Rules:** Because the Frause team did not check the signage rules, the A-boards that we posted throughout the community were confiscated by the local public works officials. It is important to understand the rules around signage. This was a mistake.
- **Lesson – Don't Hold Events; Tap into Existing Events:** It is far more cost effective to provide education and information at existing events than it is to produce an exclusive event.
- **Lesson – Hispanic/Native Resident Data is Non-Existent:** Additional research is needed to reach these two communities in order to accurately assist them in addressing their wood smoke issues.

Future Campaign Recommendations

Hyper-Focus Implementation

With tight resources becoming the norm, the best solution for implementing a wood smoke outreach effort is to create a tiered plan that can be implemented throughout the year. This effort could use the overall messages of burn dry firewood and observe burn bans in general communications to the community, but might focus more intensive efforts within the communities that have violating monitors or high incidences of nuisance complaints.

Using GIS-mapping, Census data and monitoring information, air quality professionals can define the hot-spot neighborhoods that require attention. With the targets locked, air quality professionals can cross reference where the target frequent wood burners live within these communities.

The key with hyper-focus implementation is to think about demographics before taking action. Consider if the community where the outreach will take place contains the target audience profile that the Is Your Wood Ready to Burn campaign outlines. If it is different than the target profile defined by this campaign, then it's time to dig in and follow the research path outlined in this effort to determine who the wood burners are in the community; if it is the same, then follow the implementation methodology defined by this campaign.

Use Interagency Coordination for Impact

Ideally, all air districts in a state or region would implement the suggested tactics at the same time throughout the year in order to generate the biggest statewide impact. It is also a good idea to review the state demographic information and look for areas where people in the ideal target audience live. Perhaps



there is a community outside of a particular air district jurisdiction that has influence over the target audience community. Perhaps there is a billboard or media source that is a good target due to traffic or reach. An interagency effort can reach into that community and/or combine resources to buy billboard space.

Create a Dry Firewood Network

Generate an approved list of firewood sellers and promote the list to local wood burners. Meet individually with the firewood sellers to gain assurance that they will sell firewood that tests less than 20 percent in moisture content.

Change Six Months of Seasoning to 12 Months

By advising that it takes 12 months to season firewood, there is greater chance that people will actually season for six or even eight months.

Find Existing Events

Instead of creating an event, find existing events to share the messages. Rotary, Elks Clubs, outdoor groups, hunting groups and Chambers of Commerce meetings are good local venues for sharing messages. Set up a booth or use a PowerPoint presentation to help deliver the messages.

Offer Only Moisture Meters and Firelighters

With any activity, it is important to offer an incentive. Buy and distribute moisture meters, which are a well-received incentive that can help the target audience members understand if their firewood is dry. Distributing branded firelighters can also provide an easy way to reinforce branding.

Use Retailers as the Education Link

Create a partnership with local retailers and ask them to work with their wood burning customers to share their contact information so they can receive updates from the air district. Provide a brochure and a form to gather the information and offer a free moisture meter for sharing the details.

Localize and Use Existing Materials

There are a suite of materials available for local jurisdiction modification.

Simplify Booth Presence

Take the branded materials generated for this campaign and create a booth sign that has simple graphics that communicates the messages. Also, combine all the materials into one packet for distribution at events. Make sure that this packet is the only packet that is offered at an event (along with an incentive to have people sign up for routine updates).



Create a BTU Calculation

Translate the wet firewood versus dry firewood into metric comparison by calculating the BTU output from each then showing the numbers in graphic form.

Implement a Tiered Messaging Matrix

The mission of an air district is to protect public health, so of course it makes sense that the agency's communications professional would be tasked with sharing the health message. The outcome of this campaign isn't to advise an air quality communications professional on how to communicate around health and wood smoke. Rather, this campaign identifies that the health message does not resonate with the target audience. A reasonable solution is to consider a tiered messaging system for an air district communications plan. The tiers include:

- Non-compliant, willing wood burners: Burn dry firewood and observe burn ban messages
- Community At-Large: Burn dry firewood, observe burn bans and health messages
- Legislators: Health messages
- Influencers/Partners: Burn dry firewood, observe burn bans and health messages

Role it into an Annual Campaign

Think of implementation on a calendar year. No matter when an air district's budget year begins or ends, the public information calendar for wood burning should begin in January and the target audience should receive communications during all four seasons about the stages of seasoning firewood.

Find Unique Funding/Grants

There are grant opportunities from the EPA and from other government agencies, as well as nonprofit foundations. Because grants are competitive, it is advisable for all agencies to come together to discuss funding and consider grant possibilities for applying as individual jurisdictions. Options for funding include EPA grants as well as grants from other federal programs (HUD, USDA) and offices of economic development. Private foundations, such as Home Depot, are other opportunities for funding.

Build a Volunteer Master Burner Program

In order to build a core of volunteers to share the Is Your Wood Ready to Burn messaging, it is a good idea to build a volunteer Master Burner Program. Much like a Master Gardener or Master Composter designation, the Master Burner Program would be a "train the trainer" effort. It will educate volunteers so they can take on the task of community outreach about proper firewood care. These volunteers will be educated so that they can provide hands-on education about how to properly cut and store firewood. The overall messaging for the Master Burner Trainer Program will focus on how dry firewood produces more heat. Burn ban information can also be shared by these volunteers.

Conduct More Research

Particularly for environmental justice reasons, it is recommended that future planning consider community-specific research. This is especially important for Hispanic and Native American community



members in Washington state who are impacted by wood smoke. Special considerations need to be provided for different communications styles and cultural barriers.

Campaign Budget

The overall campaign budget was \$272,000. The WSDOE funds contributed \$196,000 and local air districts contributed \$76,000. The research accounted for approximately \$133,000 of the budget and other different costs included:

- Creative strategy: \$10,449.59
- Billboard media buy: \$5,257.66
- Direct mail costs: \$1.01 each (including postage)
- A-boards costs: \$4,461.87
- Photographer: \$800.00
- Firelighters: \$550.21
- Wood burning demonstrations: \$1,210.00

Statewide Marketing Responsibilities

- **Build a Wood Smoke Task Force:** Continue the Washington subgroup and turn it into a task force that can meet routinely to discuss planning, statewide implementation and funding.
- **Update Materials and Create Media Materials:** Make final tweaks to the materials to reflect the final outcomes of the effort, including the BTU calculation. Also merge all tips sheets into one document for easy printing. This includes recommending drying firewood for six to 12 months. Also develop general press releases for use by local jurisdictions.
- **Create a Tiered Messaging Matrix:** Define all the potential wood burners and audiences that are impacted by wood smoke and create a messaging matrix that defines which audience gets which message (health versus dry firewood, as an example).
- **Create a Trade Show Booth:** Using the graphics/creative generated by the Is Your Wood Ready to Burn campaign, create a simplified booth presence to present the messages at community events. Currently too many air districts provide an overwhelming amount of information at community events and, as a result, messages are lost. A well-designed booth will present an easier way to quickly share the information.
- **Generate a BTU Calculation:** Translate the “more heat from dry firewood” into a BTU calculation so as to illustrate the heat benefit.
- **Tackle Firewood Sellers:** One of the major issues encountered through this effort is the fact that many firewood sellers sell wet firewood as dry firewood. An education campaign or some level of outreach to help manage firewood sellers would be an ideal task for the Wood Smoke Task Force.



- **Create a Master Burner Volunteer Network:** Working with the Washington State Cooperative Extension Program, develop a Master Burner volunteer network that can staff the outreach efforts for air districts that have to tackle wood smoke issues.
- **Define Retailer Education Process:** Retailers speak with wood burners every day and can play an important role in providing information about how to dry firewood. One missing link that needs to be fixed is the development of a retailer education process which incorporates a brochure with return address card and an incentive (such as a free moisture meter) to induce the public to send in their contact information.
- **Establish Funding:** All air quality districts can benefit from pooling their resources to create a bigger pool of funding. The group of air districts can also come together to generate grant funding from public and private resources.
- **Conduct Research in Native American and Hispanic Communities:** Whether focus groups or quantitative research, it is essential to conduct additional research that mirrors this process.



DRAFT Social Marketing Plan for Local Agencies

To be used verbatim or tweaked for local information

Background, Purpose and Focus

Residential wood smoke is a major pollution issue in many communities throughout Washington state. Wood smoke pollution comes from wood stoves and fireplaces, as well as outdoor burning. According to the U.S. Environmental Protection Agency there are many communities in Washington state that fail to meet or are a risk of meeting federal-based standards for particulate emissions, with emissions from wood burning devices being a primary contributor. Currently, there are 14 communities in Washington state that are areas of concern:

- Tacoma/Pierce County
- Yakima
- Vancouver
- Kent
- Marysville
- Everett
- Darrington
- Olympia/Lacey/Tumwater
- Port Angeles
- Spokane
- Lynnwood
- Mountlake
- Lake Forest Park
- South Seattle

Over the years, there has been significant progress in helping communities reduce wood smoke pollution. There have been numerous wood stove changeout programs, new technology and fuels that help reduce wood smoke emissions as well as data about what it takes to help mainstream populations reduce their emissions. However, this progress is not working fast enough for some communities in Washington state. As a result, neighborhood wood smoke is a social issue for many communities.

In December 2009, Washington state subgroup members of the Northwest Air Quality Communicators Group began the development of an education and outreach campaign plan focused on reducing wood smoke pollution in Washington state. Milestones include conducting target audience research in January and February 2010, developing creative and media strategies by early summer as well as launching a pilot campaign in late fall and conducting an evaluation in the spring of 2011.

The overall purpose of the plan was to reduce wood smoke in neighborhoods where particulate levels are monitored and are at or above the Washington state health goal. The focus for this plan was on residential indoor wood burning devices, including what should be burned, as well as what not to burn.

As a result of the Washington Wood Smoke Campaign, the Is Your Wood Ready to Burn project was completed. The intent is for air quality jurisdictions within Washington state to use the information



gathered to implement a similar campaign in their communities. Jurisdictions outside of Washington state can also benefit from this work.

Situation Analysis

As a first step in the planning process, the team identified strengths to maximize, weaknesses to minimize, opportunities to consider and threats to shore-up.

Target Audience Profile

- ***Frequent Wood Burners (Non-compliant, willing)***
 - More male than female
 - Live in a rural environment
 - 36 and older in age
 - Makes \$25,000 - \$75,000 in annual salary
 - Caucasian
 - At least a high school education
 - Children or no children (doesn't make a difference)
 - More likely to be concerned about air quality (but not significantly)
 - Although they think air quality is good or excellent, more were concerned with other things other than air quality
 - Thinks wood smoke is insignificant cause of air quality issues and does not impact health
 - Not aware of family members with health issues (or so they think)
 - Burns four plus times a week in open fireplaces, fireplace inserts or wood stoves
 - Wood not a sole source of heat
 - Don't always observe a burn ban

Marketing Objectives

- The behavior objectives are to increase the number of people who understand how burning dry firewood can help them get more heat from their fires and that they need to observe burn bans.
- The knowledge objectives are to increase the number of people who know that they need to store firewood for six to 12 months before burning and that burn bans are in place to protect the community.
- The belief objectives are that people understood that dry firewood generates a hotter fire and that they can avoid a ticket by observing burn bans.

Perceived Barriers and Motivators

- ***Benefits***
 - Burn dry firewood
 - More heat
 - Less work
 - Saves money
 - Better for family's health



- Observe burn bans
 - For the health of the community
 - To avoid fines
- **Behaviors**
 - Burn dry firewood
 - Stack wood in a manner that will allow proper circulation
 - Cover the wood pile to protect it from rainfall (without sealing in the moisture)
 - Store wood for at least six months before burning it
 - Observe burn bans
 - Check air quality status through air district website
 - Do not burn if a burn ban is in place
- **Barriers**
 - Burn dry firewood
 - Think they're already doing it correctly
 - Don't want to and can't wait six months
 - Think the wood they purchase is already seasoned
 - Observe burn bans
 - Don't know when there is a burn ban
 - Not sure how to check
 - Don't believe burning makes a difference
- **Competition**
 - Burning any type of wood, whether firewood or lumber
 - Burning trash or lumber
 - Not observing burn bans

Positioning Statement

Frequent wood burners understand that burning dry firewood is the way to get more heat from their fires and that it is more beneficial than burning wet firewood. The same frequent wood burners understand that observing burn bans help protects the community and that they can avoid fines.

Marketing Mix Strategies (4Ps)

- **Product Strategies:** Provide detailed information about how to dry firewood and offer the frequent wood burner details about the benefits of dry firewood.
- **Price Strategies:** Demonstrate the heat and economic benefits of burning dry firewood versus wet firewood. Use the water example and BTUs as a means of demonstrating the price benefits.
- **Place Strategies:** The information about how to dry firewood and the benefits of burning dry firewood will be available on the web, and through various community locations and partners. Volunteers will aid in spreading the messages.



- **Promotion Strategies:**

- Overarching Theme/Brand: Is Your Wood Ready to Burn
- Messages:
 - Burn dry firewood
 - Dry Firewood = More Heat
 - Dry Firewood for Six Months or More
 - Observe burn bans
- Messengers:
 - Fire departments
 - Fire marshals
 - Community organizations
- Communication Channels/Vehicles:
 - Website
 - Billboards
 - Direct mail
 - Packet of informational literature
 - Booth graphics
 - Incentives
 - Existing events
 - Community presentations

Evaluation Plan

- **Scope:** Evaluate message awareness and behavior change of frequent wood burners to determine reach and effectiveness.
- **Outcome Measures:**
 - Increase in awareness of messages
 - Increase in behavior change
- **Impact Measures:** Measure area-specific particulate emissions

Implementation Plan

- **Determine Hyper-Local Hot Spots:** Using the hyper-local philosophy, determine which areas in a local air district are considered hot spots for communications.
- **Localize Materials:** Use the materials created for the Is Your Wood Ready to Burn campaign and add local information to represent the local air district.
- **Create a Dry Firewood Network:** Meet with firewood sellers to determine who will guarantee that the firewood they sell is less than 20 percent moisture. Promote firewood sellers that sell low moisture firewood.



- **Find Existing Events for Outreach:** Conduct a review of existing events that are tailored to the target audience. Consider events that will be of interest to the target audience.
- **Offer Moisture Meters as Incentives:** Buy moisture meters to use as giveaways and incentives for drawings.
- **Utilize Volunteers and Partnerships:** Build a plan that includes the use of volunteers and partnerships to spread the messages.
- **Implement an Annual Campaign:** Using the techniques from the campaign, create an annual implementation effort to reach the target audiences using outreach events and marketing materials.

Sample Annual Campaign

- **February - March: Finding Firewood**
 - Generate a wood smoke map and pinpoint wood smoke hot spots in the community.
 - Locate the target audience within the hot spots.
 - Determine potential non-government partners within the community.
 - Determine influencers within target audience category (fire stations, churches, community groups).
 - Establish partnership relationships with key influencers and signup partners as in-kind sponsors.
 - Establish list of existing events throughout the year at which partners are exhibiting or hosting.
 - Distribute a Find Firewood Now press release that outlines that late winter is the time for cutting and storing firewood.
 - Purchase moisture meters and firelighters as giveaways.
 - Develop a simple packet of information (tip sheets, wood shed plan, and a list of firewood retailers) for distribution at events.
- **April - June: Storing Firewood**
 - Create a Store Firewood Now press release that defines that spring is the time to make sure wood is properly split, stacked and covered.
 - Develop and distribute a Store Firewood Now direct mail piece to hot-spot communities.
 - Attend events and hand out packets and firelighters and hold drawing for free moisture meters and have people sign-up with name and contact information.
 - Buy billboard space.
 - Print A-boards.
- **July - September: Drying Firewood**
 - Create a Dry Firewood Now press release that defines that summer is the time to make sure that wood is getting enough sun and air so it can dry.
 - Meet with retailers and introduce the registration card where people who buy a wood stove sign up to receive wood burning information and are rewarded with a free moisture meter.
 - Attend summer events.



- ***October - November: Covering Firewood***
 - Create and distribute a Cover Firewood Now press release that communicates that fall is the time to make sure firewood is out of the elements. Include tips on how to have a clean burning fire.
 - Attend fall events.
- ***December - January: Burning Firewood***
 - Create and distribute a Burn Dry Firewood and Obey Burn Bans Now press release.
 - Distribute direct mail to hot spots.



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IS YOUR WOOD
READY
TO BURN



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Addendums

- Quantitative Telephone Survey Report – *Wood Smoke Awareness & Behavior (2010)*
- Quantitative Telephone Survey - Spanish Version
- Wood Smoke Behavior Priorities – Open Fireplace
- Wood Smoke Behavior Priorities – Wood Stove / Fireplace Insert
- Focus Group Report – *Message Testing Focus Groups (2010)*
- Summit-Waller Knowledge Pre-Test Survey Questions
- Summit-Waller Knowledge Post-Test Survey Questions
- Summit-Waller Pre-Test Topline Results
- Summit-Waller Post-Test Topline Results